

ring, the point of attachment may be at the carbocyclic aromatic ring or the heterocycloalkyl ring. Bivalent radicals formed from substituted benzene derivatives and having the free valences at ring atoms are named as substituted phenylene radicals. Bivalent radicals derived from univalent polycyclic hydrocarbon radicals whose names end in “-yl” by removal of one hydrogen atom from the carbon atom with the free valence are named by adding “-idene” to the name of the corresponding univalent radical, e.g., a naphthyl group with two points of attachment is termed naphthylidene. Aryl, however, does not encompass or overlap in any way with heteroaryl, separately defined below. Hence, if one or more carbocyclic aromatic rings is fused with a heterocycloalkyl aromatic ring, the resulting ring system is heteroaryl, not aryl, as defined herein.

[0084] The term “aryloxy” refers to the group —O-aryl.

[0085] “Carbamimidoyl” refers to the group —C(=NH)—NH₂.

[0086] “Substituted carbamimidoyl” refers to the group —C(=NR^e)—NR^fR^g where R^e, is chosen from: hydrogen, cyano, optionally substituted alkyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl, and optionally substituted heterocycloalkyl; and R^f and R^g are independently chosen from: hydrogen optionally substituted alkyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl, and optionally substituted heterocycloalkyl, provided that at least one of R^e, R^f, and R^g is not hydrogen and wherein substituted alkyl, cycloalkyl, aryl, heterocycloalkyl, and heteroaryl refer respectively to alkyl, cycloalkyl, aryl, heterocycloalkyl, and heteroaryl wherein one or more (such as up to 5, for example, up to 3) hydrogen atoms are replaced by a substituent independently chosen from:

[0087] —R^a, —OR^b, optionally substituted amino (including —NR^cCOR^b, —NR^cCO₂R^a, —NR^cCONR^bR^c, —NR^bC(NR^c)NR^bR^c, —NR^bC(NCN)NR^bR^c, and —NR^cSO₂R^a), halo, cyano, nitro, oxo (as a substituent for cycloalkyl, heterocycloalkyl, and heteroaryl), optionally substituted acyl (such as —COR^b), optionally substituted alkoxy carbonyl (such as —CO₂R^b), aminocarbonyl (such as —CONR^bR^c), —OCOR^b, —OCO₂R^a, —OCONR^bR^c, sulfanyl (such as SR^b), sulfinyl (such as —SOR^a), and sulfonyl (such as —SO₂R^a and —SO₂NR^bR^c),

[0088] where R_a is chosen from optionally substituted C₁-C₆ alkyl, optionally substituted aryl, and optionally substituted heteroaryl;

[0089] R_b is chosen from H, optionally substituted C₁-C₆ alkyl, optionally substituted aryl, and optionally substituted heteroaryl; and

[0090] R^c is independently chosen from hydrogen and optionally substituted C₁-C₄ alkyl; or R_b and R^c, and the nitrogen to which they are attached, form an optionally substituted heterocycloalkyl group; and

[0091] where each optionally substituted group is unsubstituted or independently substituted with one or more, such as one, two, or three, substituents independently selected from C₁-C₄ alkyl, aryl, heteroaryl, aryl-C₁-C₄ alkyl-, heteroaryl-C₁-C₄ alkyl-, C₁-C₄ haloalkyl, —OC₁-C₄ alkyl, —OC₁-C₄ alkylphenyl, —C₁-C₄ alkyl-OH, —OC₁-C₄

haloalkyl, halo, —OH, —NH₂, —C₁-C₄ alkyl-NH₂, —N(C₁-C₄ alkyl)(C₁-C₄ alkyl), —NH(C₁-C₄ alkyl), —N(C₁-C₄ alkyl)(C₁-C₄ alkylphenyl), —NH(C₁-C₄ alkylphenyl), cyano, nitro, oxo (as a substituent for cycloalkyl, heterocycloalkyl, or heteroaryl), —CO₂H, —C(O)OC₁-C₄ alkyl, —CON(C₁-C₄ alkyl)(C₁-C₄ alkyl), —CONH(C₁-C₄ alkyl), —CONH₂, —NHC(O)(C₁-C₄ alkyl), —NH-C(O)(phenyl), —N(C₁-C₄ alkyl)C(O)(C₁-C₄ alkyl), —N(C₁-C₄ alkyl)C(O)(phenyl), —C(O)C₁-C₄ alkyl, —C(O)C₁-C₄ phenyl, —C(O)C₁-C₄ haloalkyl, —OC(O)C₁-C₄ alkyl, —SO₂(C₁-C₄ alkyl), —SO₂(phenyl), —SO₂(C₁-C₄ haloalkyl), —SO₂NH₂, —SO₂NH(C₁-C₄ alkyl), —SO₂NH(phenyl), —NHSO₂(C₁-C₄ alkyl), —NHSO₂(phenyl), and —NHSO₂(C₁-C₄ haloalkyl).

[0092] The term “halo” includes fluoro, chloro, bromo, and iodo, and the term “halogen” includes fluorine, chlorine, bromine, and iodine.

[0093] “Haloalkyl” indicates alkyl as defined above having the specified number of carbon atoms, substituted with 1 or more halogen atoms, up to the maximum allowable number of halogen atoms. Examples of haloalkyl include, but are not limited to, trifluoromethyl, difluoromethyl, 2-fluoroethyl, and penta-fluoroethyl.

[0094] “Heteroaryl” encompasses:

[0095] 5- to 7-membered aromatic, monocyclic rings containing one or more, for example, from 1 to 4, or in certain embodiments, from 1 to 3, heteroatoms chosen from N, O, and S, with the remaining ring atoms being carbon;

[0096] bicyclic heterocycloalkyl rings containing one or more, for example, from 1 to 4, or in certain embodiments, from 1 to 3, heteroatoms chosen from N, O, and S, with the remaining ring atoms being carbon and wherein at least one heteroatom is present in an aromatic ring; and

[0097] tricyclic heterocycloalkyl rings containing one or more, for example, from 1 to 5, or in certain embodiments, from 1 to 4, heteroatoms chosen from N, O, and S, with the remaining ring atoms being carbon and wherein at least one heteroatom is present in an aromatic ring.

For example, heteroaryl includes a 5- to 7-membered heterocycloalkyl, aromatic ring fused to a 5- to 7-membered cycloalkyl or heterocycloalkyl ring. For such fused, bicyclic heteroaryl ring systems wherein only one of the rings contains one or more heteroatoms, the point of attachment may be at either ring. When the total number of S and O atoms in the heteroaryl group exceeds 1, those heteroatoms are not adjacent to one another. In certain embodiments, the total number of S and O atoms in the heteroaryl group is not more than 2. In certain embodiments, the total number of S and O atoms in the aromatic heterocycle is not more than 1. Examples of heteroaryl groups include, but are not limited to, (as numbered from the linkage position assigned priority 1), 2-pyridyl, 3-pyridyl, 4-pyridyl, 2,3-pyrazinyl, 3,4-pyrazinyl, 2,4-pyrimidinyl, 3,5-pyrimidinyl, 2,3-pyrazolinyl, 2,4-imidazolinyl, isoxazolinyl, oxazolinyl, thiazolinyl, thiadiazolinyl, tetrazolyl, thienyl, benzothiophenyl, furanyl, benzofuranyl, benzoimidazolinyl, indolinyl, pyridazinyl, triazolyl, quino-